

REMARKS/ARGUMENTS

The specification has been amended to strike the use of inaccurate language. Specifically, page 8, line 10 has been amended to strike the language “partially hydrogenated butadiene, partially hydrogenated isoprene ...” The stricken language is inconsistent with the definition of “saturated” as set forth on page 8, and the Examples. The amendment is also consistent with and supported by the Examples, which compare the advantageous features of the cycloolefinic composition of the invention to various partially hydrogenated elastomers, such as SBS. Claim 7 has also been amended to delete this language.

Rejections Under 35 U.S.C. 112

Claims 1, 2, 10 and 11 have been rejected under 35 U.S.C. § 112, second paragraph. Specifically, the claims have been rejected for the terms “boec” and “bohm”. Claims 1 and 2 have been amended to replace the term boec with “based on the weight of the elastomeric copolymer”, and Claims 10 and 11 have been amended to replace the term bohm with “based on the weight of the polymer composition.” Accordingly, it is submitted that the rejections of the claims 1, 2, 10 and 11 under 35 U.S.C. § 112, second paragraph, have been overcome.

Claims 1 – 14 have been rejected under 35 U.S.C. § 112, first paragraph, as being non-enabled. Specifically, the Examiner has asserted that the term “at least one acyclic mer” is not enabled by the specification because the specification only includes two examples. In response, Applicant has amended Claims 1 and 4 to replace the term “acyclic mer” with “acyclic olefin mer”. The application includes examples of various acyclic olefin mers that can be used in the invention. Accordingly, the rejections of Claims 1 – 14 under 35 U.S.C. § 112, first paragraph, have been overcome.

Rejections Under 35 U.S.C. 102 and 103

The Claims have also been rejected as being anticipated by several references considered individually: (1) Claims 1-14 have been rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over *Rubber Toughened and Optically Transparent Blends of Cyclic Olefin Copolymers* to Khanarian (hereinafter referred to as “Khanarian”); (2) Claims 1-11 have been rejected under 35 U.S.C. § 102(b) as being

anticipated by U.S. Patent No. 5,854,349 to Abe et al.; (3) Claims 1-7 and 10-14 have been rejected under 35 U.S.C. § 102(b) as being anticipated by EP 0995776 to Miyamoto et al.; (4) Claims 1-7 and 10-12 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,918,133 to Moriya et al.; and (5) Claims 1, 3-7, and 10-12 have been rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. 2002/0128392 to Zen et al.

None of the cited references disclose or suggest the claimed invention. The claimed invention is directed to a cycloolefinic copolymer that is blended with an elastomeric copolymer comprising at least one aromatic vinyl mer and at least one saturated alkene mer. According to the teachings of the present application, the term “saturated” means “that the hydrocarbon contains only single bonds following its incorporation into the elastomeric copolymer.” Examples of saturated alkene mers include SEBS and SEPS. Applicants have discovered that the impact resistance of cycloolefinic compositions can be improved without sacrificing optical properties by blending cycloolefinic copolymers with elastomeric copolymers comprising at least one aromatic vinyl mer and at least one saturated alkene mer, and wherein the styrene content is between 14 and 39 wt%.

1. Rejections Under 102(b) based on Rubber Toughened and Optically Transparent Blends of Cyclic Olefin Copolymers to Khanarian

Khanarian describes a cyclic olefin copolymer that has been blended with an elastomeric copolymer to improve the toughness of the polymer composition. Khanarian further teaches that in order to maintain optical properties of the resulting film, the refractive index of the elastomeric composition must be closely matched to the refractive index of the cyclic olefin copolymer. See Abstract. Table 2 of Khanarian includes a list of elastomeric copolymers that were blended with the cyclic olefin copolymer (i.e., Topas). Of these, Khanarian states “only D1184, which includes unsaturated double bonds, had a refractive index close to that of Topas and gave transparent blends.” Khanarian further states that the other elastomers were not indexed matched and so could not be used in making transparent blends.” See page 2596. A review of Table 2 shows that the refractive index difference between Topas and D1184 is less than 0.004, whereas the other elastomers had refractive indexes that differed from Topas at

amounts greater than 0.0072. In particular, SEBS, a saturated elastomer, had refractive indexes differing from Topas in amounts greater than 0.02. Thus, according to the teachings of Khanarian, the elastomers described in Table 2, other than D1184, would not have good optical properties, such as haze value. This is further evident from FIG. 10, which clearly shows that haze values rapidly increase as the styrene content is decreased below 54%. From the graph in FIG. 10 and the teachings of Khanarian it is evident that the cycloolefinic composition described in Khanarian and having at least one aromatic vinyl mer and at least one saturated alkene mer would not have the claimed optical properties.

In contrast, the claimed invention recites an elastomeric copolymer comprising at least one aromatic vinyl mer and at least one saturated alkene mer and that exhibits a haze value of 40 % or less. Khanarian fails to teach a cycloolefin copolymer composition having a saturated alkene mer (e.g., SEBS) that has a haze value of less than 40%. Thus, Khanarian fails to teach the claimed invention. Accordingly, the claimed invention is not disclosed or suggested by Khanarian, and applicant respectfully requests that the rejections under 102 and 103 based on Khanarian be withdrawn.

2. Rejections Under 102(b) based on U.S. Patent No. 5,854,349 to Abe et al.

Abe is directed to a cycloolefin copolymer composition that is a copolymerization of an elastomeric component comprising an aromatic ring-containing vinyl hydrocarbon-conjugated diene copolymer or product of hydrogenation thereof, and a cycloolefinic copolymer. The cycloolefinic copolymer and the elastomeric copolymer have refractive indexes that have a difference of not more than 0.015 from each other. Although Abe states that the SEPS and SEBS may be used, it does not disclose or suggest an elastomeric copolymer comprising at least one aromatic vinyl mer and at least one saturated alkene mer, and wherein the styrene content is between 14 and 39 wt%. For example, Table 1 and the examples describe an aromatic ring-containing vinyl hydrocarbon comprising SEPS and having a styrene content of 50 and 65 wt%. Abe does not disclose or suggest an elastomeric component comprising a saturated alkene mer and a styrene content that is between 14 and 39 wt%. Thus, Abe also fails to disclose or suggest the claimed invention.

3. *Rejections Under 102 (b) or (e) based on EP 0995776 to Miyamoto et al.; U.S. Patent No. 4,918,133 to Moriya et al.; or U.S. Patent Application Publication No. 2002/0128392 to Zen et al.*

All three of these references fail to disclose or suggest a cycloolefinic copolymer comprising at least one aromatic vinyl mer and at least one saturated alkene mer. In all three of these references, the aromatic elastomer includes an unsaturated alkene, such as diene and butadiene. For example, Miyamoto describes an aromatic conjugated diene copolymer, which includes a double bond and therefore cannot be considered as saturated. Moriya also describes a cycloolefin copolymer comprising a diene copolymer such as styrenic butadiene monomer. Zen describes a cycloolefin copolymer that comprises aromatic copolymers having unsaturated copolymers, such as styrene-butadiene. Thus, Miyamoto, Moriya, and Zen all fail to disclose or suggest a cycloolefinic copolymer comprising at least one aromatic vinyl mer and at least one saturated alkene mer. Accordingly, Claim 1 and any claims dependent thereon are patentable over the cited references.

In view of the foregoing amendments and remarks, it is respectfully submitted that the rejections under 112, 102, and 103 have been overcome. Because the cited reference does not disclose or suggest each and every element recited in the claims as amended, the claimed invention is patentable over the cited reference and the pending rejections under 35 U.S.C. § 102 and 103 should be withdrawn.

Conclusion

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required

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therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

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